CLAIMS

1. A digital communication receiver (300; 400) adapted to communicate with a digital communication transmitter across a communication channel, the digital communication receiver comprising:

a channel estimator (330; 430), adapted to provide a channel estimate (H_0) of the communication channel based on a received signal (y_t),

an equalizer (340; 440), adapted to estimate a sequence of transmitted symbols (u_t) and provide a sequence of decided symbols ($\hat{u}_t$) based on the received signal and the channel estimate, and

a channel tracker (350; 450), adapted to produce an updated channel estimate (H_t) based on the received signal (y_t) and the decided symbols ($\hat{u}_t$), and adapted to supply the updated channel estimate to the equalizer,

characterized by

a controller (370; 470), which is operatively coupled to the equalizer (340; 440) and the channel tracker (350; 450), wherein

said controller is adapted to receive channel quality indicative data (Metric; H_{start}, H_{end}) associated with an output from the equalizer, to determine whether said channel quality indicative data fail to meet a predetermined criterion, and, if so, to supply an enabling control signal ("Tracker y/n?") to the channel tracker, and wherein

said enabling control signal is adapted to switch the channel tracker from a disabled state, in which no updated channel estimate (H_t) is produced, to an enabled state, in which said updated channel estimate (H_t) is produced.

2. A digital communication receiver as in claim 1, wherein said channel quality indicative data (Metric) are produced by the equalizer (340) and represents a degree of

correspondence between the received signal (y_t) and the decided symbols ($\hat{u}_t$).

3. A digital communication receiver as in claim 2, wherein said channel quality indicative data (Metric) are computed by the equalizer (340) as a squared distance between symbols in the received signal (y_t) and symbols in a predicted received signal given the decided symbols ($\hat{u}_t$).

4. A digital communication receiver as in any preceding claim, wherein said predetermined criterion is stored as a threshold value in an electronic memory (390) operatively coupled to the controller (370).

5. A digital communication receiver as in claim 1, further comprising a second channel tracker (480), which is operatively coupled to the equalizer (440) and the controller (470), wherein

said channel quality indicative data (H_{start}, H_{end}) are produced by the second channel tracker in the form of additional channel estimates (H_{start}, H_{end}) based on the decided symbols ($\hat{u}_t$) from the equalizer, and wherein

the controller (470) is adapted to compare the additional channel estimates with an initial channel estimate (H_0) and to produce said enabling control signal ("Tracker y/n?"), if the comparison indicates a difference bigger than said predetermined criterion.

6. A digital communication receiver as in any preceding claim, capable of Time Division Multiple Access communication.

7. A digital communication receiver (300; 400) adapted to communicate with a digital communication trans-

mitter across a communication channel, the digital communication receiver comprising:

a channel estimator (330; 430), adapted to provide a channel estimate (H_0) of the communication channel based on a received signal (y_t),

an equalizer (340; 440), adapted to estimate a sequence of transmitted symbols (u_t) and provide a sequence of decided symbols ($\hat{u}_t$) based on the received signal and the channel estimate, and

a channel tracker (350; 450), adapted to produce an updated channel estimate (H_t) based on the received signal (y_t) and the decided symbols ($\hat{u}_t$), and adapted to supply the updated channel estimate to the equalizer,

characterized by

a controller (370; 470), which is operatively coupled to the channel tracker (350; 450), wherein

said controller is adapted to compare said updated channel estimate (H_t) with an initial channel estimate (H_0) and to supply a disabling control signal ("Tracker y/n?") to the channel tracker, if the comparison indicates a difference smaller than a predetermined criterion, and wherein

said disabling control signal is adapted to switch the channel tracker from an enabled state, in which said updated channel estimate (H_t) is produced, to a disabled state, in which no updated channel estimate (H_t) is produced.

8. A digital communication receiver as in claim 7, the receiver being capable of Time Division Multiple Access (TDMA) communication, wherein said updated channel estimate relates to the beginning and/or the end of a TDMA burst.

9. A wireless communication device, comprising a digital communication receiver as in any preceding claim.

10. A wireless communication device as in claim 9, wherein the device is a radio telephone.

11. A wireless communication device as in claim 9, wherein the device is a base station in a cellular communication system.

12. A method of operating a digital communication receiver (300, 400), wherein a channel estimate (H_0) of a communication channel between the receiver and a digital communication transmitter is produced from a received signal (y_t), and wherein a sequence of decided symbols ($\hat{u}_t$) is produced from the received signal and the channel estimate, characterized by the steps of

a) receiving channel quality indicative data (Metric; H_{start}, H_{end}), which are directly or indirectly associated with said sequence of decided symbols ($\hat{u}_t$);

b) determining whether said channel quality indicative data fail to meet a predetermined criterion; and

c) conditionally, if the predetermined criterion is not met, switching from a disabled state, in which no updated channel estimate (H_t) is produced, to an enabled state, in which an updated channel estimate (H_t) is produced from said received signal (y_t) and said sequence of decided symbols ($\hat{u}_t$).

13. A method as in claim 12, further comprising the step of

a') producing said channel quality indicative data (Metric) as a calculated squared distance between symbols in the received signal (y_t) and symbols in a predicted received signal given the decided symbols ($\hat{u}_t$).

14. A method as in claim 12, further comprising the step of

a'') producing said channel quality indicative data as additional channel estimates (H_{start}, H_{end}) based on the decided symbols ($\hat{u}_t$), wherein

said predetermined criterion is a degree of correspondence between said additional channel estimates and an initial channel estimate.

15. A method of operating a digital communication receiver (300, 400), wherein a channel estimate (H_0) of a communication channel between the receiver and a digital communication transmitter is produced from a received signal (y_t), and wherein a sequence of decided symbols ($\hat{u}_t$) is produced from the received signal and the channel estimate, **characterized** by the steps of:

a) receiving an updated channel estimate (H_t) based on the decided symbols ($\hat{u}_t$);

b) comparing said updated channel estimate (H_t) with an initial channel estimate (H_0); and

c) conditionally, if the comparison indicates a difference smaller than a predetermined criterion, switching from an enabled state, in which an updated channel estimate (H_t) is produced from said received signal (y_t) and said sequence of decided symbols ($\hat{u}_t$), to a disabled state, in which no updated channel estimate (H_t) is produced.

16. A method as in claim 15, wherein the receiver is capable of Time Division Multiple Access (TDMA) communication and wherein said updated channel estimate relates to the beginning and/or the end of a TDMA burst.